39. The method of claim 34 wherein the likely degree of interest is determined for all of the items of information stored in said database in response to receipt of a user's request for access.--

REMARKS

In response to the Office Action dated August 1, 1995, Applicants respectfully request reconsideration and withdrawal of the rejection of the claims.

Claims 1-27 were rejected under 35 U.S.C. § 103 as being unpatentable over the Bussey et al publication in view of the Wyle publication. With respect to claim 1, the rejection states that the Bussey et al publication discloses all of the features of this claim, with the exception of ranking the likely degree of interest for each item in accordance with the user profile, and presenting the items of information in order of ranking. With respect to the first distinction noted in the Office Action, the rejection states that the Wyle publication teaches that it is known to rank the relevance of articles, and from this concludes that it would be obvious to display or present items of information "to respond the user's personalized interest." It is respectfully submitted, however, that the Bussey et al and Wyle publications do not suggest the subject matter of claim 1 to a person of ordinary skill in the art.

The Bussey et al publication discloses a passive information grazing system which is simply an information filtering system. Information flows in one direction from an external broadcast source, such as a news wire, and is either allowed or not allowed to

reach users, depending on certain filtering criteria. This system requires the use of keywords, which are supplied in some cases by the information sources. In order to pass a particular user's filter, the keyword in a user profile must have sufficient overlap with the keywords assigned to the items of information. If the overlap does not exist, the item of information never reaches the user. In essence, the information grazing system of the Bussey et al publication is designed to reduce information overload for individuals.

In contrast, the present invention does not primarily function to selectively present only certain items of information to a user. Rather, it enhances the flow of information within a community. In a filtering system such as that disclosed in the Bussey et al publication, it is quite possible that a user would not see a valued item, simply because the item's keywords do not match those of the user profile. The present invention does not prevent a user from viewing any particular item of information. Rather than selectively filtering items of information based on keywords or the like, the system of the present invention ranks the likely degree of interest for each of the available items of information in accordance with a user profile. Then, the items of information are presented to the user in order of ranking. As such, the user is provided with the potential to view all available items of information, not just those selected by a filtering algorithm. As such, the user can view items of information having a relatively low ranking, as well as those having a high ranking. The significance of this capability is the fact that, if the user selects a low-ranked item of information and indicates an interest in it, that item of information can be factored into the user's profile. In a filtering system of the type disclosed in the Bussey et al publication, however, a lowly ranked item of information

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may never reach the user, because it will be filtered out, and hence cannot be used to adjust the user's profile.

Another distinction between the present invention and the system of the Bussey et al publication pertains to categorization. In the system of the Bussey et al publication, "Newly received articles are classified according to subject matter by the classification process." (Section 3.1). Such classification of information is contrary to the fundamental basis of the present invention, in which the database of information is global, unified, and unstructured. The messages that are stored within the database are not classified under different topic categories in a manner that may prevent them from being presented to the user. See, for example, the specification at page 6, lines 10-14.

Turning now to the Wyle publication, it was cited for its disclosure of the ranking of the relevance of articles. However, like the Bussey et al publication, the system disclosed in the Wyle publication is essentially a filtering system. See, for example, the title of the publication. The paragraph at the bottom of the left column on page 10 recites that the system is based upon software that performs "automatic information gathering, filtering and dissemination." As described in the middle of the right column on page 11, the first filtering stage implements "category selection."

Thus, although the Wyle publication discloses the concept of ranking, such ranking is only employed as part of the filtering process. Referring to the last full paragraph in the left column of page 12, the system runs two ranking algorithms and "delivers those items with the highest [ranking] from each." In other words, ranking is used to set a

filter threshold, and is not employed to provide the user with a sorted list from which to choose items of interest.

Although not explicitly stated, the rejection seems to imply that it would be obvious to present items of information in rank order, in view of the teachings of the Wyle publication. In fact, however, the Wyle publication teaches exactly the opposite. Near the bottom of the left column on page 12, the publication states "In order to factor out biases, the items are delivered in random order, and neither the...administrator nor the subscriber knows how each algorithm ranked the items."

In fact, it is not obvious to display the items of information to the user in rank order in a filtering system. The fundamental concept which underlies a filtering system is to eliminate those items of information which are determined not to be of interest to the user, and thereby present the user with only items that meet the filtering criteria. Since the filter performs the selection process, the user already knows that those items of information being presented have all been determined to be relevant. As such, there is no need to list them in any particular order of ranking, since presumably the user is interested in all of them. In the system of the present invention, however, the user can potentially see every item of information stored in the database. As such, displaying the items of information in a manner which identifies their ranking becomes significant, because the user must be able to determine which items are more likely to be of interest.

Accordingly, it is respectfully submitted that the Bussey et al and Wyle publications, whether considered individually or in combination, do not suggest an information access system which includes the claimed features of "means for ranking the

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likely degree of interest for each of the available items of information in accordance with the user profile", and "means for presenting the items of information to an access device in order of ranking and enabling a user to retrieve each item." The filtering systems to which they are directed have no need for this approach to presenting information.

It appears from the Office Action that none of the other claims pending in the application were individually considered, since no separate ground of rejection is set forth for any of them. Rather, claims 2-27 were summarily rejected on the grounds that they "encompass the same scope of invention as...claim 1." In fact, however, it is respectfully submitted that these additional claims recite further patentable features of the invention which are neither disclosed nor otherwise suggested by the prior art.

For example, claim 5, which has be rewritten in independent form, recites that the ranking means ranks the available items of information "on the basis of correlation with indications of interest provided by other users." In the preferred implementation of the invention, feedback from an entire community is used to determine the ranking for individual items of information that a particular user sees. This community-wide flow of information is nowhere suggested in the Bussey et al and Wyle publications.

Claim 7 recites that the ranking is carried out "on the basis of a combination of the content of the item and correlation with indications of interest in that item provided by other users." Again, the Bussey et al and Wyle publications do not disclose the concept of ranking and the relevance of an item of information based on a combination of the item's content and other users' indications of interest.

Claims 6 and 8 state that the ranking is based upon a regression analysis, and claim 10 recites that a spreading activation technique is used to rank the items of information. Claims 11 and 12 recite that ranking is based upon a formula which predicts a user's interest in an item of information on the basis of a variety of factors. It is respectfully submitted that none of these techniques for ranking the relevance of information are suggested in the applied references.

Claims 13 and 14 respectively recite the formula is produced by means of genetic algorithms and genetic programming. Claim 16 recite that the ranking means employs evolutionary programming techniques to predict a user's interest in items of information. Again, it is respectfully submitted that these features are not suggested by the applied references.
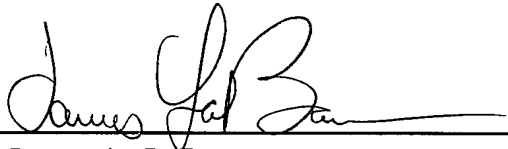
For the same reasons, it is respectfully submitted that the subject matter of original claims 17-27, as well as new claims 28-39, is neither disclosed nor otherwise suggested by the cited prior art. If the rejection of any of these claims is maintained, the Examiner is requested to identify the manner in which the references are being interpreted to suggest the claimed subject matter.

For the foregoing reasons, it is respectfully submitted that the subject matter of the claims pending in the application is neither disclosed nor otherwise suggested by the prior art. Reconsideration and withdrawal of the rejection of claims 1-27, and allowance of all claims pending in the application, are respectfully requested.

Respectfully submitted,

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